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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/596,556	06/19/2000	John Petter Fjeldstad	1380-0148	4133

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/596,556

Applicant(s)

FJELDSTAD ET AL.

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2002 and 16 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 13-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-12 is/are rejected.
- 7) ☒ Claim(s) 3 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. The response provided by the applicant has been read and given careful consideration.

The a signed copy of the IDS received 7/18/2002 is returned with this action. Only "A" type references were cited and therefore the presence of these in the record likely would have no effect on the action mailed 7/16/2002 based upon this characterisation by the EPO. Responses to the arguments of the applicant are presented after the first rejection to which they are directed. Rejections of the previous office action not appearing below are withdrawn based upon the arguments and amendments of the applicant.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claim<sup>416</sup>1-12, drawn to a methods for recording in thermoplastic materials, classified in class 430, subclass 2.
- II. Claims 13-17, drawn to an apparatus for recording in thermoplastic materials, classified in class 359, subclass 35.

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The inventions are distinct, each from the other because of the following reasons:

3. Inventions group I and group II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the delays between the various steps may be timed without a separate circuit, using a watch or the like, only one corona charging circuit is needed and only one temperature controlling circuit is needed and these may be adjusted during the process.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and because of their

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recognized divergent subject matter, restriction for examination purposes as indicated is proper, restriction for examination purposes as indicated is proper.

5. A telephone call was made to Mark Olds on 12/20/2001 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

7 Applicant's election of group I (claims 1-12) in Paper No. 8 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 13-17 are withdrawn from consideration **and this restriction is made final.**

8 The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9 Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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After "forming", please insert - - plural - - (claim 1/line 1) (see specification at page 10/LINE 20-23, 10/35-11/30 and 15/5-/16/23 which clearly indicates that the latter steps relate only to the double exposure embodiments)

"erasing the AMS-film" should be proceeded by - - partially- - (claim 1/line24).

The features of the last line reading "restricting the erasing process by a pre-set value of the diffraction efficiency" should be added after "for recording additional holograms" (claim 1/line 240 to render the claims more clear that multiple holograms are recorded and how this is achieved.

10 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11 Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either** Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', Avtometriya Vol. 4 pp. 86-90 (1994) or Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-157 (08/1996), in view of Augostini '885, Bean et al. '938 and Schwartz '698 combined with Levine '008 and Bartfai '643.

Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', Avtometriya Vol. 4 pp. 86-90 (1994) describes the recording of a first hologram in a thermoplastic recording medium including heat development and erasure and the recording of a second hologram so that both the first (residual)

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hologram and the second hologram are produced during development. The examiner has only had a spot translation of this reference. If the applicant has one made, the examiner would appreciate a copy with the next response.

Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-157 (08/1996) teaches the formation of a double exposure hologram by corona charging a thermoplastic recording medium, exposing the hologram to achieve a value of 4.5% diffraction efficiency, partial heat erasure, recharging the thermoplastic recording medium and exposure of the second holographic image to produce a double interferogram. (pages 151-152) see the data in figures 1 and 3.

Augustini '885 teaches the erasure of deformation images in thermoplastic recording media by heating and simultaneous uniform exposure to light. (1/59-62)

Bean et al. '938 teaches the use of heating, shorting of the conductive layer and uniform light exposure in erasing thermoplastic recording media, this ensure erasure particularly in cases where heat alone is not enough. (4/1-16)

Schwartz '698 teaches the use of uniform light irradiation to dissipate the charge in the photoconductive layer along with heating of the thermoplastic recording medium to return the imaged area to a smooth condition. (6/55-66)

Levine '008 teaches the use of light to heat the thermoplastic recording layer to facilitate heat erasure (3/6-18). The use of photo flashlamps to facilitate heating is disclosed. (3/64-72).

Bartfai '643 teaches the use of a flashlamp to provide the illumination for recording grating patterns from a resolution target in a thermoplastic recording medium. (7/29-52).

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It would have been obvious to modify the inventions of **either** Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', *Avtometriya* Vol. 4 pp. 86-90 (1994) or Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-157 (08/1996) by including uniform exposure during the heat erasure treatment to add additional heating power and dissipate charges in the medium as taught by Augustini '885, Bean et al. '938 and Schwartz '698 and further it would have been obvious to use a flashlamp as the uniform exposure sources based upon the teaching that it provides heating capacity and charge movement in photothermoplastic recording media as evidenced by Levine '008 and Bartfai '643. The number of references serve to establish the well known character of these aspects of the claimed invention and provide additional motivation for the combination of these features.

The applicant argues on page 10 of the response that no motivation for the combination is provided. The examiner disagrees noting the facts supported by the prior art of record which indicate that by including uniform exposure during the heat erasure treatment to add additional heating power and dissipate charges in the medium (as taught by Augustini '885, Bean et al. '938 and Schwartz '698) and further that using a flashlamp as the uniform exposure source is known within the thermoplastic recording media art to provide heating capacity and charge movement in photothermoplastic recording media (as evidenced by Levine '008 and Bartfai '643.) Therefore motivation exists and the arguments that a legal conclusion is merely reached is without merit. The uniform application of light is recognized in the art as facilitating charge dissipation and additional heating **as evidenced** by the teachings of the references. The primary

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references clearly only partially erase the first image as two holographic images, due to the double exposure) are formed in the final development. This double exposure with a residual retaining of the first grating/holographic pattern (to a non-zero diffraction level) is taught in Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', *Avtometriya* Vol. 4 pp. 86-90 (1994) or Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-157 (08/1996) and is evident in even their titles. The only difference between the processes taught in these primary references is the use of the uniform exposure while performing the heating erasure, which is clearly obvious in view of the secondary references. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991). Since a double exposure hologram is formed with partial erasure between the exposure steps, the first hologram is not completely erased. The strating temperature embraces room temperature (20 degrees C), which appear to be the temperature these media are used at. Additionally, there is only a preference for this range and the claims do not require that the temperature be in this range. (see claim 18 for a more positive recitation)



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12 Claims 1, 2 and 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either** Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', Avtometriya Vol. 4 pp. 86-90 (1994) or Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-157 (08/1996), in view of Augostini '885, Bean et al. '938 and Schwartz '698 combined with Levine '008 and Bartfai '643 and SU 1805445.

SU 1805445 describes the epoxypropylcarbazole with 5% butylglycidyl ether sensitized with 3% of a TNF derivative. (col.3/lines 24-36) This is corona charge, exposed, developed and erased using heating. The measurement of the diffraction efficiency including a measurement of the zero order is disclosed. (abstract) Note the diffraction efficiency appearing in column 4.

It would have been obvious to modify the combination of **either** Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', Avtometriya Vol. 4 pp. 86-90 (1994) or Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-157 (08/1996), in view of Augostini '885, Bean et al. '938 and Schwartz '698 combined with Levine '008 and Bartfai '643 as set for the above by measuring both the zero order and a higher order to allow the measurement of the diffraction efficiency to be corrected for intensity variations in the laser during measurement as taught by SU 1805445. Further it would have been obvious to modify the combination of **either** Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', Avtometriya Vol. 4 pp. 86-90 (1994) or Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-

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157 (08/1996), in view of Augostini '885, Bean et al. '938 and Schwartz '698 combined with Levine '008 and Bartfai '643 as set for the above by using the recording medium of SU 1805445 with a reasonable expectation of achieving comparable results based upon their disclosed equivalent function. The heating rate is tied to the material used, specifically the binder, which is the same as that of SU 1805445. With respect to claim 6, the process does not require the use of that temperature, but is merely reciting a materials property inherent in the material of SU 1805445.

The rejection is maintained for the reasons provided above without further comment as no further arguments were directed at this rejection.

13 Claims 1, 2 and 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either** Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', *Avtometriya* Vol. 4 pp. 86-90 (1994) or Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-157 (08/1996), in view of Augostini '885, Bean et al. '938 and Schwartz '698 combined with Levine '008 and Bartfai '643 and SU 1805445 and further in view of Belonozhko, A.M., et al. 'The control or erasure of holograms on thermoplastic carbazole containing polymeric semiconductors', *Zh. Nauchn. Prikl. Fotogr. Kinematogr.* Vol. 33(2) pp. 133-135 (1988)

Belonozhko, A.M., et al. 'The control or erasure of holograms on thermoplastic carbazole containing polymeric semiconductors', *Zh. Nauchn. Prikl. Fotogr. Kinematogr.* Vol. 33(2) pp. 133-135 (1988) teaches that the exposure of the recording medium to light before

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erasure reduces the temperature required as does the lowering of the erasure temperature gradient.

In addition to the basis provided above, the examiner cites Belonozhko, A.M., et al. 'The control or erasure of holograms on thermoplastic carbazole containing polymeric semiconductors', Zh. Nauchn. Prikl. Fotogr. Kinematogr. Vol. 33(2) pp. 133-135 (1988) to further support the contention that the use of uniform illumination in combination with heating is known to reduce the heating requirements in the photothermoplastic art and constitutes a recognized benefit promoting the combination of **either** Okushko, V.A., et al., 'Recording of double exposure holographic interferograms on photothermoplastic materials using residual memory.', Avtometriya Vol. 4 pp. 86-90 (1994) or Panasyuk et al., 'Process of double-exposure interferogram formation on deformed surface of thermoplastic media. SPIE vol. 2851, pp. 150-157 (08/1996), in view of Augostini '885, Bean et al. '938 and Schwertz '698 combined with Levine '008 and Bartfai '643 and SU 1805445.

The rejection is maintained for the reasons provided above without further comment as no further arguments were directed at this rejection.

14 Claims 3 and 18 are objected to as allowable over the prior art, but objected to as being dependent upon rejected claims.

15 **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

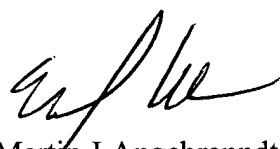
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J Angebranndt  
Primary Examiner  
Art Unit 1756

March 12, 2003